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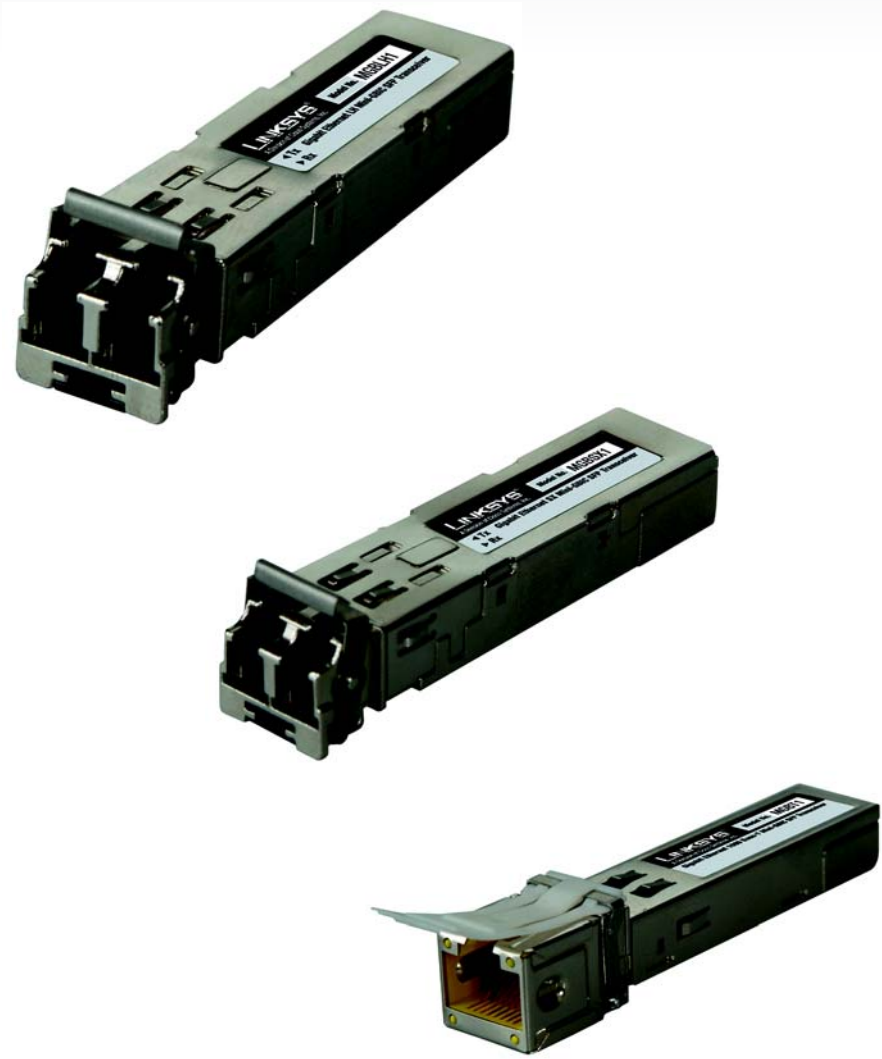
A Division of Cisco Systems, Inc.



Gigabit SFP Modules

Gigabit Ethernet 1000 Base-T Mini-GBIC SFP Transceiver
Gigabit Ethernet SX Mini-GBIC SFP Transceiver
Gigabit Ethernet LH Mini-GBIC SFP Transceiver

WIRED

User Guide

CISCO SYSTEMS

Model No. MGBT1, MGBLH1, MGBSX1

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Chapter 1: Using the Gigabit SFP Modules

Introduction

Thank you for choosing the Gigabit SFP Modules. These Modules insert into the mini-GBIC ports on either the SR2024 or SR224G, creating new Gigabit ports. Each Gigabit SFP Module is hot-swappable, meaning you can connect them even when the switch is running.

Use the following directions for installing and removing either the MGBLH1 and MGBSX1 or the MGBT1.

Installation and Removal Directions for the MGBLH1 and MGBSX1

1. Insert the Gigabit SFP Module with the printed side up and the rubber port cap facing out.

Figure 1-1: Insert the Module

2. Remove the Gigabit SFP Module's rubber port cap.

Figure 1-2: Removing the rubber port cap

3. Connect the fiber cable's LC Connector to the Gigabit SFP Module's port.

Figure 1-3: Connect the fiber cable

4. Now the fiber is connected to the Gigabit SFP Module and should be functioning. Connect the other end of the cable to an SFP Module to verify that the fiber connection is complete.

Figure 1-4: The connected fiber cable

5. Press the fiber cable's connector and pull to **remove** the fiber cable from the Gigabit SFP Module.

Figure 1-5: Removing the fiber cable

6. To remove the Gigabit SFP Module, begin by pulling the Module's bail latch.

Figure 1-6: Pull the bail latch

7. Now, remove the Gigabit SFP Module.

Figure 1-7: Remove the Module

Installation and Removal Directions for the MGBT1

1. Insert the Gigabit SFP Module with the printed side up and the pull tab facing out.

Figure 1-8: Insert the MGBT1

2. Lock the Gigabit SFP Module in place.

Figure 1-9: Lock the pull tab

3. Connect the Cat5 cable to the Gigabit SFP Module's port. Connect the other end of the Cat5 cable to another switch that is equipped with a Linksys MGBT1 or Gigabit Ethernet port.

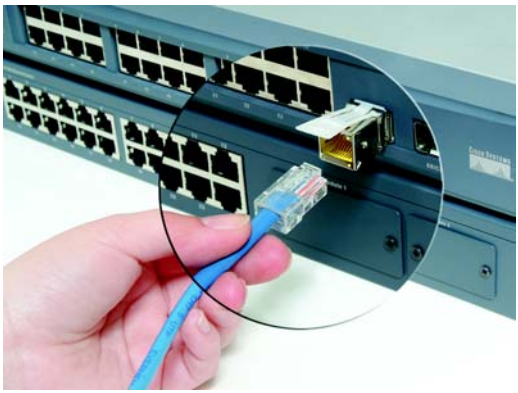

Figure 1-10: Connect the Cat5 cable

4. Press the RJ-45 connector's tab and pull to **remove** the Cat5 cable from the Gigabit SFP Module.

Figure 1-11: Remove the Cat5 cable

5. To remove the Gigabit SFP Module, begin by pulling the Module's pull tab.

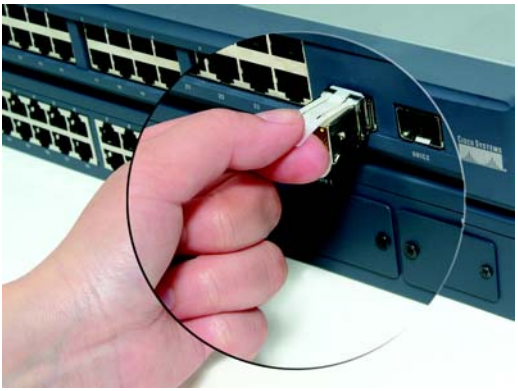

Figure 1-12: Pull the pull tab

6. Now, remove the Gigabit SFP Module.

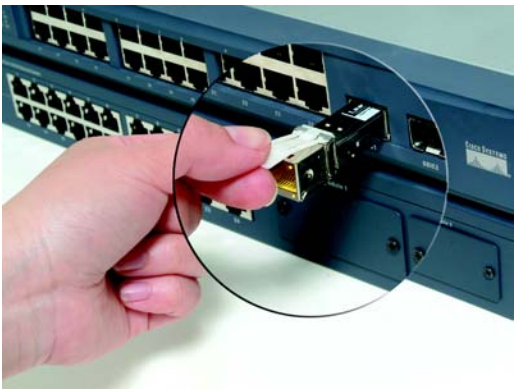

Figure 1-13: Remove the MGBT1

Appendix A: Specifications

MGBT1

Standards:	IEEE 802.3z, IEEE 802.3u, IEEE 802.3ab compliant, Compliant with Specifications of SFP Transceiver MSA Specification
Cabling Type:	UTP Cat 5 cable by 100m or 328 ft cabling distance
Dimensions:	0.33" x 0.53" x 2.60" (8.5 mm x 13.4 mm x 66 mm)
Unit Weight:	0.63 oz. (0.02 kg)
Power:	3.3V supplied by MiniGBIC port
Certifications:	FCC, CE
Operating Temp.:	0ºC to 40ºC (32ºF to 104ºF)
Storage Temp.:	-20ºC to 70ºC (-4ºF to 158ºF)
Operating Humidity:	0% to 85%, Non-Condensing
Storage Humidity:	5% to 90%, Non-Condensing

MGBSX1

Standards:	Compliant with Specifications of SFP Transceiver MSA Specification
Cabling Type:	850 nm (850nm TYP., 830-860nm) MMF (Multi-Mode Fiber) MMF: 62.5/125um fiber @ 160 MHz/km to 220m minimum distance 62.5/125um fiber @ 200 MHz/km to 275m minimum distance 50/125um fiber @ 400 MHz/km to 500m minimum distance 50/125um fiber @ 500 MHz/km to 550m minimum distance
Dimensions:	0.33" x 0.53" x 2.22" (8.5 mm x 13.4 mm x 56.5 mm)
Unit Weight:	0.63 oz. (0.02 kg)
Power:	Transmitter Spec: Power : -9.5 – -4 dBm Reciever Spec:Sensitivity: -20 - -17dBm

	Input Power: -20 – -17 dBm
	Stress Sensitivity: 50/125 um: -13.5dBm, 62.5/125 um: -12.5dBm
	3.3V Power Supply
Operating Temp.:	0ºC to 40ºC (32ºF to 104ºF)
Storage Temp.:	-20ºC to 70ºC (-4ºF to 158ºF)
Operating Humidity:	0% to 85%, Non-Condensing
Storage Humidity:	5% to 90%, Non-Condensing

MGBLH1

Standards:	Compliant with Specifications of SFP Transceiver MSA
	Specification
Cabling Type:	Wavelength: 1300 nm (1310nm TYP, 1290-1355nm,)
	MMF: Core: 50 or 62.5um, Modular Bandwidth 500MHz/km
	Cable Distance: 550 to 2000m
	SMF: Core: 9 um, Modular Bandwidth 500MHz/km
	Cable Distance: 40 Km
Dimensions:	0.33" x 0.53" x 2.22" (8.5 mm x 13.4 mm x 56.5 mm)
Unit Weight:	0.85 oz. (0.02 kg)
Power:	3.3 V 160-200mA (supplied by mini-GBIC port)
	Surge Current 30 mA
	Dissipation : 530 mW (TYP. 830 Max.)
	Transmitter Spec.Power : -5 – 0 dBm
	Receiver Spec. -22 – -3 dBm
Operating Temp.:	0ºC to 40ºC (32ºF to 104ºF)
Storage Temp.:	-20ºC to 70ºC (-4ºF to 158ºF)
Operating Humidity:	0% to 85%, Non-Condensing
Storage Humidity:	5% to 90%, Non-Condensing

Appendix B: Warranty Information

LIMITED WARRANTY

Linksys warrants to You that, for a period of one year (the "Warranty Period"), your Linksys Product will be substantially free of defects in materials and workmanship under normal use. Your exclusive remedy and Linksys' entire liability under this warranty will be for Linksys at its option to repair or replace the Product or refund Your purchase price less any rebates. This limited warranty extends only to the original purchaser.

If the Product proves defective during the Warranty Period call Linksys Technical Support in order to obtain a Return Authorization Number, if applicable. BE SURE TO HAVE YOUR PROOF OF PURCHASE ON HAND WHEN CALLING. If You are requested to return the Product, mark the Return Authorization Number clearly on the outside of the package and include a copy of your original proof of purchase. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE. You are responsible for shipping defective Products to Linksys. Linksys pays for UPS Ground shipping from Linksys back to You only. Customers located outside of the United States of America and Canada are responsible for all shipping and handling charges.

ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE WARRANTY PERIOD. ALL OTHER EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF NON-INFRINGEMENT, ARE DISCLAIMED. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to You. This warranty gives You specific legal rights, and You may also have other rights which vary by jurisdiction.

This warranty does not apply if the Product (a) has been altered, except by Linksys, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Linksys, or (c) has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident. In addition, due to the continual development of new techniques for intruding upon and attacking networks, Linksys does not warrant that the Product will be free of vulnerability to intrusion or attack.

TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL LINKSYS BE LIABLE FOR ANY LOST DATA, REVENUE OR PROFIT, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, REGARDLESS OF THE THEORY OF LIABILITY (INCLUDING NEGLIGENCE), ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE THE PRODUCT (INCLUDING ANY SOFTWARE), EVEN IF LINKSYS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT WILL LINKSYS' LIABILITY EXCEED THE AMOUNT PAID BY YOU FOR THE PRODUCT. The foregoing limitations will apply even if any warranty or remedy provided under this Agreement fails of its essential purpose. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to You.

Please direct all inquiries to: Linksys, P.O. Box 18558, Irvine, CA 92623.

Appendix C: Regulatory Information

FCC STATEMENT

This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna

Increase the separation between the equipment or devices

Connect the equipment to an outlet other than the receiver's

Consult a dealer or an experienced radio/TV technician for assistance

FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

INDUSTRY CANADA (CANADA)

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations.

EC DECLARATION OF CONFORMITY (EUROPE)

Linksys declares that the Wireless-G ADSL Gateway conforms to the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC:

EN 301 489-1, 301 489-17 General EMC requirements for Radio equipment.

EN 609 50 Safety

EN 300-328-1, EN 300-328-2 Technical requirements for Radio equipment.

Caution: This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. Contact local Authority for procedure to follow.

Note: Combinations of power levels and antennas resulting in a radiated power level of above 100 mW equivalent isotropic radiated power (EIRP) are considered as not compliant with the above mentioned directive and are not allowed for use within the European community and countries that have adopted the European R&TTE directive 1999/5/EC.

For more details on legal combinations of power levels and antennas, contact Linksys Corporate Compliance.

Linksys vakuuttaa täten että Wireless-G ADSL Gateway tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien näiden direktiivien muiden ehtojen mukainen.

Linksys Group déclare la Passerelle ADSL sans fil-G est conforme aux conditions essentielles et aux dispositions relatives à la directive 1999/5/EC.

Belgique:

Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour une utilisation publique à l'extérieur de bâtiments, une licence de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.

France:

2.4 GHz Bande : les canaux 10, 11, 12, 13 (2457, 2462, 2467, et 2472 MHz respectivement) sont complétement libres d'utilisation en France (en utilisation intérieur). Pour ce qui est des autres canaux, ils peuvent être soumis à autorisation selon le department. L'utilisation en extérieur est soumis à autorisation préalable et très restreint.

Vous pouvez contacter l'Autorité de Régulation des Télécommunications (http://www.art-telecom.fr) pour de plus amples renseignements.

FCC PART 68 STATEMENT

This equipment complies with Part 68 of the FCC Rules. A label is attached to the equipment that contains, among other information, its FCC registration number and ringer equivalence number. If requested, this information must be provided to the telephone company.

This equipment uses the following USOC Jack: RJ-11.

An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack, which is FCC Part 68 compliant. Connection to the telephone network should be made by using the standard modular telephone jack.

The REN is useful to determine the quantity of devices that may be connected to the telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of RENs should not exceed 5. To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

If this equipment causes harm to the telephone network, the telephone company may discontinue your service temporarily. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

In the event this equipment should fail to operate properly, disconnect the unit from the telephone line. Try using another FCC approved device in the same telephone jack. If the trouble persists, call the telephone company repair service bureau. If the trouble does not persist and appears to be with this unit, disconnect the unit from the telephone line and discontinue use of the unit until it is repaired. Please note that the telephone company may ask that you disconnect the equipment from the telephone network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. The user must use the accessories and cables supplied by the manufacturer to get optimum performance from the product.

No repairs may be done by the customer. If trouble is experienced with this equipment, please contact your authorized support provider for repair and warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved. This equipment cannot be used on telephone company provided coin service. Connection to Party Line Service is subject to state tariffs.

SAFETY NOTICES

Caution: To reduce the risk of fire, use only No.26 AWG or larger telecommunication line cord.

Do not use this product near water, for example, in a wet basement or near a swimming pool.

Appendix D: Contact Information

Need to contact Linksys? Visit us online for information on the latest products and updates to your existing products at: or	 http://www.linksys.com ftp.linksys.com
Can't find information about a product you want to buy on the web? Do you want to know more about networking with Linksys products? Give our advice line a call at: Or fax your request in to:	 800-546-5797 (LINKSYS) 949-261-8868
If you experience problems with any Linksys product, you can call us at: Don't wish to call? You can e-mail us at:	 800-326-7114 support@linksys.com
If any Linksys product proves defective during its warranty period, you can call the Linksys Return Merchandise Authorization department for obtaining a Return Authorization Number at: (Details on Warranty and RMA issues can be found in the Warranty Information section in this User Guide.)	 949-261-1288